Food Policy 43 (2013) 227–236

Contents lists available at ScienceDirect

Food Policy

journal homepage: www.elsevier.com/locate/foodpol

Food price surges and poverty in urban Colombia: New evidence from household survey data

Laura Rodriguez-Takeuchi [a], Katsushi S. Imai [b,*]

[a] The Growth, Poverty and Inequality Programme, Overseas Development Institute (ODI), London, UK
[b] Economics, School of Social Sciences, University of Manchester, UK

ARTICLE INFO

Article history:
Received 4 October 2012
Received in revised form 7 September 2013
Accepted 20 September 2013

Keywords:
Food price surges
Urban poverty
Colombia

ABSTRACT

The present study simulates the impacts of price surges in 2006–2008 on poverty in the main Colombian cities drawing upon household survey data. It is found that the price surges increased both extreme and moderate poverty in urban areas, but the magnitude of poverty rise was not homogeneous across geographical locations or in terms of household characteristics, such as, education or gender of the household head. As a policy option we suggest "geographical targeting" or "demographic targeting" that will select and support poor households by locations or socio-demographic characteristics guided by the degree of household vulnerability to food price shocks.

Introduction

From 2007 till the second quarter of 2008 international prices of basic staples experienced major increases. After the fall in late 2008 to early 2009, prices of major commodities, such as cereals, oilseeds and meat showed increasing trends again till early 2011 and prices are expected to rise in the near future (FAO, 2011a,b). In particular, large and unexpected price movements are likely to be harmful to people's living standards in developing countries (FAO, 2011b) with serious social and economic outcomes, such as, riots and protests, increase in poverty, hunger and malnutrition (FAO, 2008), declines in investment in research, physical and human capital (Prakash, 2010), and reduction in aid flows due to increased costs for food aid programs (Oxfam, 2011).

The head of the World Food Program described the price surge episode as the 'silent tsunami of hunger' (Sheeran, 2011). Banerjee and Duflo (2011) have called the attention to the fact that there is enough food to feed the entire world population and have stressed that a food crisis is a problem beyond shortage. Hunger is not a situation where there *is* not food but the one in which some people do not *have* enough food and thus, how people get entitlement and access to food is important (Sen, 1980).

The extent to which people are affected by food price surges depends on whether they are net food producers or consumers (Chen and Ravallion, 2004; Ivanic and Martin, 2008). The urban poor are likely to be vulnerable to price surges because their budgets are directly hit by inflated food purchases. This is called a trade entitlement failure which could stem from an endowment loss or a deterioration in terms of trade (Sen, 1980, 1999). When people purchase food, their ability to fulfill the right to be free from hunger is limited by precarious wages and employment, as well as lack of access to economic resources, market places or social security nets (High Commissioner for Human Rights and FAO, 2010).

While the immediate effect of a price increase is the loss in households purchasing power *ceteris paribus*, the price shock could have further consequences as the households adapt to the shock, e.g., by selling assets, reducing the quantity, quality and variety of food consumed, or cutting other non-food expenditures on, for example, health care and education (FAO, 2008). Even if the price surge is short-lived, it could have a negative impact on household welfare in the long run (FAO, 2011b), debilitating households' ability to respond to future distressful events and limiting their possibility to escape poverty.

The importance of the issue has prompted studies to evaluate recent price surges on household poverty in developing countries (e.g., Ivanic and Martin, 2008; de Janvry and Sadoulet, 2010; Leyaro et al., 2010; Thurlow et al., 2011; Coleman, 2012; Ivanic et al., 2012; Fujii, 2013). The present study will empirically contribute to this literature by estimating the effects of the 2006–2008 food price surges on urban households' expenditure and aggregate poverty in Colombian cities. Our methodological approach follows de Janvry and Sadoulet (2010) to take into account the impacts of food

* Corresponding author. Address: Economics, School of Social Sciences, University of Manchester, Arthur Lewis Building, Oxford Road, Manchester M13 9PL, UK. Tel.: +44 (0)161 275 4827; fax: +44 (0)161 275 4928.
E-mail address: Katsushi.Imai@manchester.ac.uk (K.S. Imai).

0306-9192/$ - see front matter © 2013 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.foodpol.2013.09.017

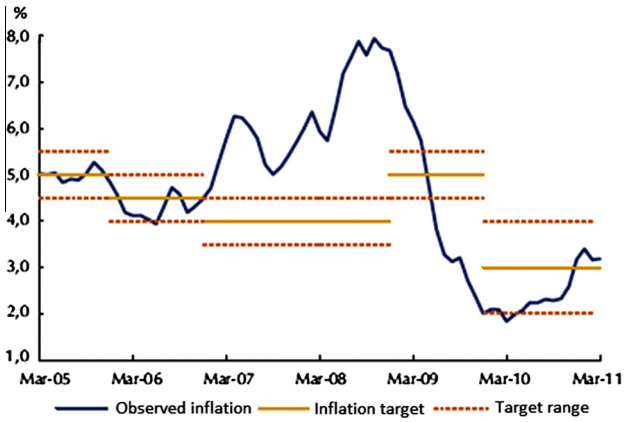

Fig. 1. Annual Consumer inflation in Colombia. *Source*: BanRep (2008).

price changes on household expenditure and simulate both first round and second round effects.[1]

The rest of the paper is structured as follows. The next section provides the background of food crisis and poverty in Colombia. Data and Methodology present the data and the methodology respectively. The results of estimations are reported and discussed in Results. The final section offers concluding remarks and policy discussions.

Food price surges and poverty in Colombia

Although overall inflation in Colombia had been generally moderate till the end of 2006, the Central Bank of Colombia missed the inflationary target range (3.5–4.5%) in 2007–08 mainly due to food price surges (Fig. 1).

During 2006–2008 annual changes of food CPI were much higher than those of general CPI due to price surges in basic staples, and these movements were not homogeneous across cities in the country (Table 1). As we will show in Results, the food price surge is found to affect urban poverty differently across different cities in Colombia, which is consistent with the evidence in Ethiopia (Ulimwengu et al., 2009) and in China (Chen and Ravallion, 2004). The food price impacts can also be disaggregated by household characteristics. FAO's (2008) estimates in nine developing countries suggest that the poorest, landless and female-headed households are generally hit harder by the price surge. In Ethiopia, the price surge affected more severely food and non-food consumption of households with few assets or with their head working as a casual worker (Alem and Söderbom, 2010).

Even though Colombia does not suffer from a severe hunger problem (FAO, 2010), 40.8% of households are classified as "food insecure" according to the National Nutritional State Survey – ENSIN.[2] Poor people in developing countries spend a much larger share of their incomes on food – roughly 75–80% – than middle income people in industrialized countries – 15–20% (Brandt and Otzen, 2007), which makes price impacts more acute in developing countries (Prakash, 2010). The negative relationship between household disposable income and the food expenditure share – Engel's law – can help explain why even temporary movements in prices have large negative effects on poor households in the long run. The higher the share of resources destined to food acquisition, the higher the risk of entitlement failure (Maxwell and Smith, 1992), even putting at risk the health or the life of the poorest in developing countries (Brandt and Otzen, 2007). In the context of urban Colombia, the share of food expenditure in the total monthly budget is 27.7% for the average household, while it is 35.6% (17.6%) for those in the lowest (highest) quintile.[3] The same pattern is observed for different food items.

Table 1
CPI Annual accumulated variation (December). *Source*: DANE (2011), Consumer Price Index.

	2006		2007		2008	
	Total	Food	Total	Food	Total	Food
Colombia	4.48	5.68	5.69	8.51	7.67	13.17
Medellin	3.75	4.61	6.65	11.23	7.69	11.79
Barranquilla	5.99	8.57	6.58	11.10	7.80	11.84
Bogota	4.13	5.46	5.57	7.84	7.49	13.87
Cartagena	5.51	6.90	7.16	9.96	8.17	12.66
Manizales	4.83	6.10	5.54	10.01	6.08	11.07
Monteria	4.29	5.93	5.65	8.84	7.59	11.09
Neiva	5.60	7.36	6.38	9.17	10.83	17.77
Villavicencio	4.69	6.65	5.98	7.59	8.05	13.37
Pasto	4.24	3.66	2.64	2.20	7.85	17.80
Cucuta	6.63	8.20	5.17	6.27	9.84	14.90
Pereira	5.60	6.49	5.77	9.88	7.20	11.81
Bucaramanga	5.54	7.86	5.72	7.47	8.21	12.50
Cali	4.34	4.35	4.99	7.27	7.59	12.92

Data

Estimating the impacts of food price changes on households requires detailed and disaggregated price data as well as household food expenditure data. Food expenditure data are sourced from the National Survey of Incomes and Expenditures 2006–07 (ENIG[4]), a cross-sectional household survey which was conducted in 296 municipalities by the Colombian National Statistical Department (DANE) during the period October 2006 to September 2007. The sub-sample we use for the present study consists of 14,695 households in the urban zone of 13 cities (out of 24 capital cities).[5] We focus only on urban households. Following Dessus et al. (2008) who calculated aggregate poverty changes in urban areas, the present study assumes that food inflation affects only household consumption as the income from food production activities is negligible for urban households. In our sample, on average only 0.2% of the household income is derived from own account food production.

The degree and the speed of transmission can differ between producers and consumers, across different regions within a country, and across different countries. Although some studies (e.g. Ivanic and Martin, 2008) have used international prices by assuming their full and instantaneous transmission to domestic prices, local prices are more appropriate for estimating the local impacts. For instance, Ivanic et al. (2012) find that the poverty impact estimate using global prices is lower than derived by the country-level price data. This paper goes further by using the city level CPI data collected by DANE (2011).

Because households in the ENIG were sampled over the course of a year (Table A1 in Appendix), price data are matched with food expenditures for each household according to its location and the

[1] The heterogeneity of the impact of inflation has been largely ignored in the literature with a few exceptions, such as Coleman (2012) and Fujii (2013).

[2] Food insecurity is defined as the lack of money to buy food, the decrease in quantities or meals consumed and the experience of hunger by members of the household (Álvarez et al., 2006).

[3] Authors' calculation based on the National Survey of Incomes and Expenditures Data.

[4] Encuesta Nacional de Ingresos y Gastos.

[5] The 13 cities are Bogota, Medellin, Cali, Barranquilla, Bucaramanga, Cartagena, Cucuta, Manizales, Monteria, Neiva, Pasto, Pereira and Villavicencio. The total sample in the ENIG consists of 4,693,914 households which were randomly selected from the census data. The ENIG uses the census data in 1993 as a reference.